

A REVIEW AND ANALYSIS OF THE RESEARCH LITERATURE ON THE EDUCATION OF NATIVE AMERICAN STUDENTS

I would like to thank the Chairman (Senator Ben Nighthorse Campbell), the Vice Chairman (Daniel K. Inouye) and members of the Senate Committee on Indian Affairs for this opportunity to present a review and analysis of the research literature on the education of Native American students.

In an electronic review of over 10,000 documents listed in the ERIC Clearinghouse, Sociological Abstracts, Psychological Abstracts, Anthropological Abstracts, Social Sciences Index, Cambridge Scientific Abstracts Doctoral and Masters Theses, and other sources, a list of 117 research documents on the education of Native American students were identified and selected.¹

These documents were divided into seven areas of concentration and give us an excellent record of the research on American Indians, Alaska Natives, Hawaiian Natives, and limited information on Indigenous peoples of Canada, New Zealand, and Australia.

The seven categories used to divide the research included the following:

1. Early childhood environment and experiences
2. Native language and cultural programs in schools
3. Teachers, instruction, and curriculum
4. Community influences and school control
5. Student characteristics
6. Factors leading to success in college
7. Native American students leaving school before graduation

Early Childhood environment and experiences: Though limited, the literature on young Native children reminds us that providing opportunities for early development of language and other skills can have significant influence on how well these children do academically in their later life as students.

Native language and cultural programs in schools: The influences of Native language and cultural programs in schools show significant influences on student motivation; sense of identity and self; positive attitudes; and supporting improved academic performance.

¹ Demmert, William G. Jr., & Towner, John C. (2002) Improving Academic Performance Among Native American Students, A Review and Analysis of the Research Literature, Woodring College of Education, Western Washington University, Bellingham, Washington (unpublished).

Teachers, instruction, and curriculum: Competent teachers in their subject area with a variety of instructional approaches and a challenging curriculum can motivate students to do well in school.

Community and parental influences on academic performance: Local attitudes, use of traditional knowledge, support from parents can all have positive influences on a young student's academic performance.

Student characteristics: Language use and knowledge, motivation, positive life experiences, early goal setting, basic skill knowledge, and the ability to balance conflicts between home, community, and school all contribute to a student's ability to succeed in school.

Factors leading to success in college: Academic skills, support from community and family, mentors, and levels of social and cultural maturity all have an influence on whether a student succeeds or fails academically.

Native American Students Leaving School Before Graduation: Absenteeism, pregnancy, grade point averages, poor quality of teacher-students relationships, lack of parental participation and support, levels of academic skills (including level of English skills), acculturation, boredom with school life and curriculum, irrelevance of school curriculum and what they wanted to do in life, moving from one school to another, transportation difficulties, substance abuse are all reasons identified for leaving school early.²

International comparisons: International studies of other Native people support the findings on Native Americans regarding family support, development of language and other academic skills, levels of congruency between the school and community regarding language and culture, students' motivation and sense of identity.

An analysis of the research literature that focuses on the influences of Native Language and Cultural programs (generally referred to as Curriculum Based Education <CBE>) presents a very limited number of experimental, quasi-experimental, and non-experimental research.

A second review of the literature was conducted that focused on Native language and cultural programs. This review listed 193 research studies and is an up-date of the first review.³ Definition of the different kinds of research used in this review is described as follows:

² See <http://www.ael.org/eric/demmert.pdf> for a published review and summary of the research literature (2001).

³ Demmert, William G., Jr., & Towner, John C. (2003) A Review of the Research Literature on the Influences of Culturally Based Education on the Academic Performance of Native American Studies, Northwest Regional Educational Laboratory, Portland, Oregon.

Experimental Studies: Research designs that employ the random assignment of subjects to treatments.

Quasi-Experimental Studies: Research designs that involve the assignment of intact groups to treatment conditions. Typically, the unit of analysis (N) is not the same as the sampling unit.

Non-Experimental: Studies characterized by the use of existing comparison groups formed outside the context of the research. No researcher control over who gets what and when. Often referred to as *causal-comparative* or *ex post facto* designs. These designs do not provide strong evidence in support of causal assertions.

There were four (4) experimental studies found and a quick summary tells us the following:

The two studies by Omizo, et al. (1989 and 1998) are well-designed and executed experimental studies. However, the experimental treatment (in-school counseling) is not specifically designed to be culturally relevant. The outcome variable in both these studies is self-concept. There is no attempt to link self-concept to achievement.

The study by Kratochwill et al. (2001) examines a previously researched and explicitly defined Home-school program (FAST). The design (randomized matched pairs) and outcome measures (CBM's) for behavior and achievement are promising alternatives for future research.

The studies by Tharp (1982), are well designed and executed. Of special interest is the exportation of a lab school program to the public schools. The treatment condition involved a number of key elements, one of which was culturally relevant curricula. It is difficult to sort the impact of these different treatment elements.

There were only two quasi-experimental studies, one of which was still unpublished but promising. These include the following:

The Clark (1996) study tells us that the use of specific computer-assisted instruction program does not appear promising so far as achievement in writing is concerned with Native American students.

Lipka and Adams (2002) present some evidence that culturally based education may be effective in teaching some aspects of mathematics. Limitations include the unknown technical adequacy of the outcome measure and the confounding of schools and intact classes with the treatment.

There were eight non-experimental studies that as a group do not provide strong evidence in support of causal assertions; in this case, the effectiveness of culturally-based education programs.

However, by and large, the findings of these studies are interpreted by the researchers to be in favor of the culturally based (bilingual/bicultural) education programs examined.

These non-experimental studies include the following:

- ◆ Murtagh, 1982 *
- ◆ Alaska Systemic Initiative, 1998
- ◆ Bacon, et al., 1982 *
- ◆ Franks, 1988
- ◆ Rosier and Holm, 1980
- ◆ Wright, et al., 2000
- ◆ Brenner, 1998 *
- ◆ Cotrell, 1971

No evidence was found that indicated that culturally based education would be contra-indicated so far as student achievement is concerned. The findings of these studies generate working hypotheses.

Heritage language Native American children who are taught using their heritage language will learn that language better than children who are taught in a dominant second language.

Heritage language-speaking children will lose competence in their Native language to some degree when the language of instruction is the dominant language.

Children who are more proficient with their heritage language will also be more proficient with the dominant language.

There is some level of proficiency in a Native language that must be achieved and maintained in order to avoid the “subtractive effects” of learning a second, dominant, language (Wright et al. 2000).

Programs that include locally-based heritage language and cultural elements will serve to strengthen home-school relationships. This connection may be an intervening variable explaining increased student achievement.

These five working hypotheses are consistent with three relatively well established research theories that include the following:

- 1) Cultural Compatibility Theory
- 2) Cognitive Theory
- 3) Cultural-Historical-Activity Theory (CHAT)

Cultural Compatibility Theory. The more closely aligned the human interactions in the school and in the classroom, are aligned with those of the community, the more likely the goals of the school will be reached.

Cognitive Theory. Introducing new knowledge through an association with prior knowledge - for learning to occur, relevant prior knowledge, in a person's long term memory, must be stimulated or utilized, with this new information undergoing some form of processing that focuses on conceptual characteristics of the new information (such as its meaning, personal and social relevance, or relationships to prior knowledge and experience) as a means of improving learning and recall.

Cultural-Historical-Activity Theory (CHAT). Issues of culture, language, cognition, community and socialization are central to learning. The primary socialization of infants and young children (as well as all later socialization into new communities of practice) is accomplished through joint, meaningful activity with guidance by more accomplished participants, principally through language exchanges or other semiotic processes.

Language vocabularies and routines acquired by learners through these processes are the elements that account for community, linguistic, and cultural continuity, and are the primary cognitive tools for individual and group problem solving and adaptations (e.g., culturally-based secondary socialization processes like schooling can be facilitated by activating the learners' cognitive and linguistic tools laid down by community socialization). Primary to this hypothesis is that activity (primarily joint activity) is the setting in which language and cognition are developed, and that patterns of activity have a cultural basis.⁴

In summary "What have I presented today?"

First, the driving question in which we are interested, both for research answers and for legislative purposes, is "What are the effects of Native language and culturally-based education programs on school achievement for Native American students?"

Second, no evidence was found that indicated that culturally based education would be contra-indicated so far as student achievement is concerned. The findings of these studies generate working hypotheses that support a number of theories generally recognized by researchers looking at Native American education.

Third, the review of the research literature which includes experimental, quasi-experimental, and non-experimental studies, tell us that the literature supports program activities in each of the following areas:

1. Early childhood environment and experiences
2. Native language and cultural programs in schools
3. Teachers, instruction, and curriculum
4. Community influences and school control
5. Student characteristics
6. Factors leading to success in college
7. Native American students leaving school before graduation

⁴ See Demmert, William G. & Towner John. (2003),

Fourth, it is necessary that we continue working on an expanded, and an improved, research data base that will help continue moving forward as we continue to identify characteristics of programs that lead to improving language development, academic performance, social and cultural maturity, and other priorities of Native America. The current level of research information, though limited, consistently supports current efforts to strengthen Native language and cultural priorities as a way to improve academic performance.

In a systematic effort to continue learning from existing programs like Punana Leo, the Piagan Institute, and others, a number of highly qualified contemporary researchers that have a high interest and strong record in this area have formed a partnership to continue the research that is absolutely critical if we are to continue isolating characteristics of successful educational programs serving Native American children.

There are several reasons for the interest in indigenous language and cultural programs, especially for the early years of a youngster's life. First, there is a continuing interest in promoting continued development and preservation of Native languages found in no other part of the world; second, there appears to be a distinct connection between improved academic performance and the levels of congruence between the culture of the school and the culture of the community served; and third there appears to be important cognitive opportunities for individuals that strengthen this intelligence.

Finally, David Grissmer of the RAND Corporation, reports that American Indian students have made gains in reading, mathematics, and geography scores from 1990 – 2000 according to National Assessment of Educational Progress records.⁵ This information also tells us that the longer the Indian student is in school the better other students do in comparison (the exception is in geography where Indian students do as well as other students that score well in this area of academics). The limited research on Native language and culturally based education tells us that there is growing evidence that Native students will do as well as all other students when programs start early in a youngsters life, when teachers and communities support what they are doing, when environments are challenging with mentors that are truly interested in their well being and when there is a high level of congruency between the language and cultural base of the school and the community.⁶

⁵ Personal discussion with Grissmer, David. (2003), regarding a review and analysis of American Indian reading, mathematics, and geography scores, RAND Corporation.

⁶ Each of the reports listed above, summarizing the research literature, support these hypotheses.